HEAT PIPE

Field of the invention

The present invention relates to a heat pipe, and especially to a spiral support structure for providing a support force to press the wick structure of screen mesh tightly to an internal wall of a pipe body.

Background of the invention

A heat pipe provides excellent heat-dissipation and high conductivity while being light, simple in structure and multifunctional. The heat pipe can thus dissipate a great amount of heat without using power and is adapted to electronic products. The heat pipe of the prior art has a wick structure of screen mesh that allows the work fluid to flow smoothly in the heat pipe by means of capillary action.

However, the wick structure of screen mesh of the heat pipe of the prior art is tightly stuck to an internal wall of the pipe body by a sintering process. The sintering process will soften the wick structure of screen mesh, and the wick structure of screen mesh consequently cannot provide sufficient support to allow the wick structure of screen mesh to adhere tightly to the internal wall of the pipe body. This in turn reduces the capillary action of the heat pipe as well as the function thereof.

With the employment of unique considerations and application of theories, and based on several years experience in specialized production of all flexible assembly systems and mechanisms, the inventor has come up with an innovative heat pipe.

Summary of the invention

The primary object of the present invention is to provide a heat pipe. The heat pipe has a spiral support structure for providing a support force to the internal wall of the wick structure of screen mesh. The wick structure of screen mesh will provide an enough support force to press the wick structure of screen mesh tightly to an internal wall of a pipe body of the heat pipe. As a result, the heat pipe will provide capillary action.

In order to achieve the above objects, the present invention provides a heat pipe comprising a hollow pipe body, a wick structure of screen mesh assembled on an internal wall of the pipe body, and at least one support structure spirally formed by a continuous board and inserted into the pipe body for outwardly extending to press tightly to the internal wall of the wick structure of screen mesh. The support structure provides a support force to support the wick structure of screen mesh on the internal wall of the wick structure of screen mesh by a surface of the spiral board.

Brief description of drawing

The various objects and advantages of the present invention will be more readily understood from the following detailed description when read in conjunction with the appended drawing, in which:

Fig. 1 is a perspective view of the present invention;

Fig. 2 is a cross-sectional view of according to a partial side of the present invention; and

Fig. 3 is a side cross-sectional view of the present invention.

Detailed description of the preferred embodiment

Referring to FIGS. 1 to 3, the present invention provides a heat pipe 1 which comprises a pipe body 10, a wick structure of screen mesh 11 and a support structure 12. The pipe body 10 is hollow and receives therein the wick structure of screen mesh 11 and the support structure 12 and further includes an internal wall 100 formed therein.

The wick structure of screen mesh 11 is made of screen mesh, and is assembled between the pipe body 10 and the support structure 12. The wick structure of screen mesh 11 is pressed tightly to the internal wall 100 of the pipe body 10 because of the support structure 12.

Moreover, the support structure 12 is disposed inside the pipe body 10 to press the wick structure of screen mesh 11 tightly to the internal wall 100 of the pipe body 10. The support structure 12 is spiral in shape, and is formed by a continuous board in a right spiral or a left spiral direction. The support structure 12 provides a support force to support the wick structure of screen mesh 11 on the internal wall 100 of the wick structure of screen mesh 11 by a surface of the spiral board. Although a sintering process will soften the wick structure of screen mesh 11, the support structure 12 can still provide enough support to press the wick structure of screen mesh 11 tightly to the internal wall 100 of a pipe body 10. The heat pipe 1 will provide capillary action.

Furthermore, the support structure 12 comprises a plurality of groove holes 120 to allow the working fluid to flow though the groove holes 120 in the heat pipe 1 to enhance the thermal performance.

Although the present invention has been described with reference to the preferred embodiment thereof, it will be understood that the invention is not limited to the details thereof. Various substitutions and modification have

suggested in the foregoing description, and other will occur to those of ordinary skill in the art. Therefore, all such substitutions and modifications are intended to be embraced within the scope of the invention as defined in the appended claims.